Maryland Historical Trust

Maryland Inventory of Historic Properties number: BA-2720

Name: US 40 over Gunpowder Falls.

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended ___X___ Eligibility Not Recommended _____

Criteria: ___A ___B X C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G __None

Comments: _____

_____

_____

Reviewer, OPS: Anne E. Bruder Date: 3 April 2001

Reviewer, NR Program: Peter E. Kurtze Date: 3 April 2001

MARYLAND INVENTORY OF HISTORIC BRIDGES
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. BA-2720

SHA Bridge No. 3035 **Bridge name** US 40 over Gunpowder Falls

LOCATION:
Street/Road name and number [facility carried] US 40 (Pulaski Highway)

City/town Bradshaw **Vicinity** X

County Baltimore

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State X **County** _____ **Municipal** _____ **Other** _____

HISTORIC STATUS:
Is the bridge located within a designated historic district? Yes _____ **No** X
National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** _____

Name of district _____

BRIDGE TYPE:
Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ____ **Timber-And-Concrete** ___

Stone Arch Bridge _____

Metal Truss Bridge _____

Movable Bridge ____:
Swing _____ **Bascule Single Leaf** __ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder X_____:
Rolled Girder X **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete _____:
Concrete Arch_____ **Concrete Slab**_____ **Concrete Beam** ____ **Rigid Frame** _____
Other _____ **Type Name** _____

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DESCRIPTION:

Setting: Urban _____ **Small town** _____ **Rural** _____X_____

Describe Setting:

Bridge No. 3035 carries US 40 (Pulaski Highway) eastbound and westbound over Gunpowder Falls in Baltimore County. US 40 runs north-south and Gunpowder Falls flows east-west. The bridge is located in the vicinity of Bradshaw and is within the Gunpowder Falls State Park.

Describe Superstructure and Substructure:

Bridge No. 3035 is a dual 3-span, 4-lane, metal girder bridge. The bridge was originally built in 1935. The structure has a total length of 196 feet long and each structure has a clear roadway width of 30 feet. The out-to-out width of each structure is 32 feet. The superstructure consists of 18 rolled girders which support a concrete deck and concrete parapets. The girders are 12 inches x 37 inches and are spaced four feet apart. The concrete deck is 10.75 inches thick and it has a bituminous wearing surface. The structure has pierced parapets and the roadway approaches are tangent and level with the bridge. The substructure consists of two (2) concrete abutments and two (2) concrete piers. There are four (4) flared, concrete wing walls. The eastbound bridge has a sufficiency rating of 55.1 and the westbound bridge has a sufficiency rating of 65.8.

According to the 1996 inspection report, this structure is in fair condition with minor section loss, cracking, spalling, and scour. The concrete roadway surface contains a few holes. The concrete is eroding in the wing walls, which contain some diagonal/random cracking. The abutments contain some minor surface erosion where exposed to the stream flow and have vertical and horizontal cracks and surface spalls. The piers have medium vertical and random cracks with scale and surface erosion at the water level. The superstructure has some deterioration. Some steel girders have heavy pitting from rust. There is also minor rusting throughout the beams. The concrete parapet contains deterioration with concrete scaling and spalls and exposed reinforcing bars.

Discuss Major Alterations:

Inspection reports from 1996 detail no major alterations to the bridge.

HISTORY:

WHEN was the bridge built: 1935
This date is: Actual _____X_____ **Estimated** _____
Source of date: Plaque _____ **Design plans** ____ **County bridge files/inspection form** _____
Other (specify): State Highway Administration Bridge files/inspection form

WHY was the bridge built?

The route of present U.S. 40 was traveled as early as 1733, when *Poor Richard's Almanac* noted the route of the Old Philadelphia Road (State Route 7) on the general course of the present highway. Under pressure from the federal Bureau of Public Roads in the early 1930s, the State Roads Commission planned the construction of a new road from Baltimore to Havre de Grace, in lieu of widening the old Philadelphia Road. In 1935, the "new" Philadelphia Road opened as Maryland's first dual highway, and was christened the Pulaski Highway. This bridge was built as a component of the construction of the Pulaski Highway.

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WHO was the designer?

State Roads Commission

WHO was the builder?

Unknown

WHY was the bridge altered?

N/A

Was this bridge built as part of an organized bridge-building campaign

There is no evidence that the bridge was built as part of an organized bridge building campaign.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character ____X____

The bridge is eligible for the National Register of Historic Places under Criterion C, as a significant example of metal girder construction. The structure has a high degree of integrity and retains such character-defining elements of the type as rolled longitudinal I-beams, concrete abutments, and concrete piers. It also contains the original pierced parapets.

Was the bridge constructed in response to significant events in Maryland or local history?

Metal girder bridges were most likely introduced and first popularized in Maryland by the state's major railroads of the nineteenth century including the Baltimore and Susquehanna, its successor the Northern Central, and the Baltimore and Ohio Railroad. Bridge engineering historians have documented the fact that James Milholland (or Mulholland) erected the earliest plate girder span in the United States on the Baltimore and Susquehanna Railroad in 1846 at Bolton Station, near present-day Mount Royal Station. The sides (web) and bottom flange of Milholland's 54-foot-long span were wholly of wrought iron and included a top flange reinforced with a 12x12-inch timber. Plates employed in the bridge were 6 feet deep and 38 inches wide, giving the entire bridge a total weight of some 14 tons. Milholland's pioneering plate girder cost $2,200 (Tyrrell 1911:195). By December 31, 1861, the Northern Central Railroad, which succeeded the Baltimore and Susquehanna, maintained an operating inventory in Maryland of 50 or more bridges described simply as "girder" spans, in addition to a number of Howe trusses. Most of these were probably iron girder bridges; the longest were the 117-foot double-span bridge over Jones Falls and the 106-foot double-span girder bridge at Pierce's Mill (Gunnarson 1990:179-180).

As in the nation, girder bridge technology in Maryland was quickly adapted to cope with the increasingly heavy traffic demands of the twentieth century caused by automobile and truck traffic. The 1899 Maryland Geological Survey report on highways noted that "there are comparatively few I-beam bridges, one of the cheapest and best forms for spans less than 25 or 30 feet" (Johnson 1899:206). Interestingly, the report also urged construction of a composite metal, brick, and concrete bridge, noting that "no method of construction is more durable than the combination of masonry and I-beams, between which are transverse arches of brick, the whole covered with concrete, over which

is laid the roadway" (Johnson 1899:206). Whether any such bridges (transitional structures between I-beams and reinforced concrete spans) were built is unknown.

Official state and county highway reports—issued between 1900 and the early 1920s through the Highway Division of the Maryland Geological Survey and its successor, the State Roads Commission—generally do not reference or describe girder construction. An analysis of the current statewide listing of county and municipal bridges (a listing maintained by the State Highway Administration) reveals that 48 county bridges, out of the total of 141 approximately dated to "1900" by county engineers, were listed as steel girder, steel stringer, or variants of such terms. (It should be noted that the "1900" date is often given when no exact date is pinpointed for a bridge that is clearly old). A grand total of 200 bridges (including "steel culverts"), out of 550 bridges dated on the county list between 1901 and 1930, were described as steel beam, steel girder, or steel stringer and girder varieties. The total suggests that among the various highway bridge types built in the early twentieth century metal girder bridges in Maryland between 1900 and 1930 were second in popularity only to reinforced concrete bridges. However, these numbers must be interpreted with caution, as they do not necessarily include all county and municipal bridges.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

The bridge is located in an area which does not appear to be eligible for historic designation.

Is the bridge a significant example of its type?

The bridge is a potentially significant example of a metal girder bridge, possessing a high degree of integrity.

Does the bridge retain integrity of important elements described in Context Addendum?

The bridge retains the character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including rolled longitudinal I-beams, concrete piers, and concrete abutments.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is a significant example of the work of the State Roads Commission in the 1930s.

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files _____ **SHA inspection/bridge files** X
Other (list):

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Gunnarson, Robert
1990 *The Story of the Northern Central Railway, From Baltimore to Lake Ontario.* Greenberg Publishing Co., Sykesville, Maryland.

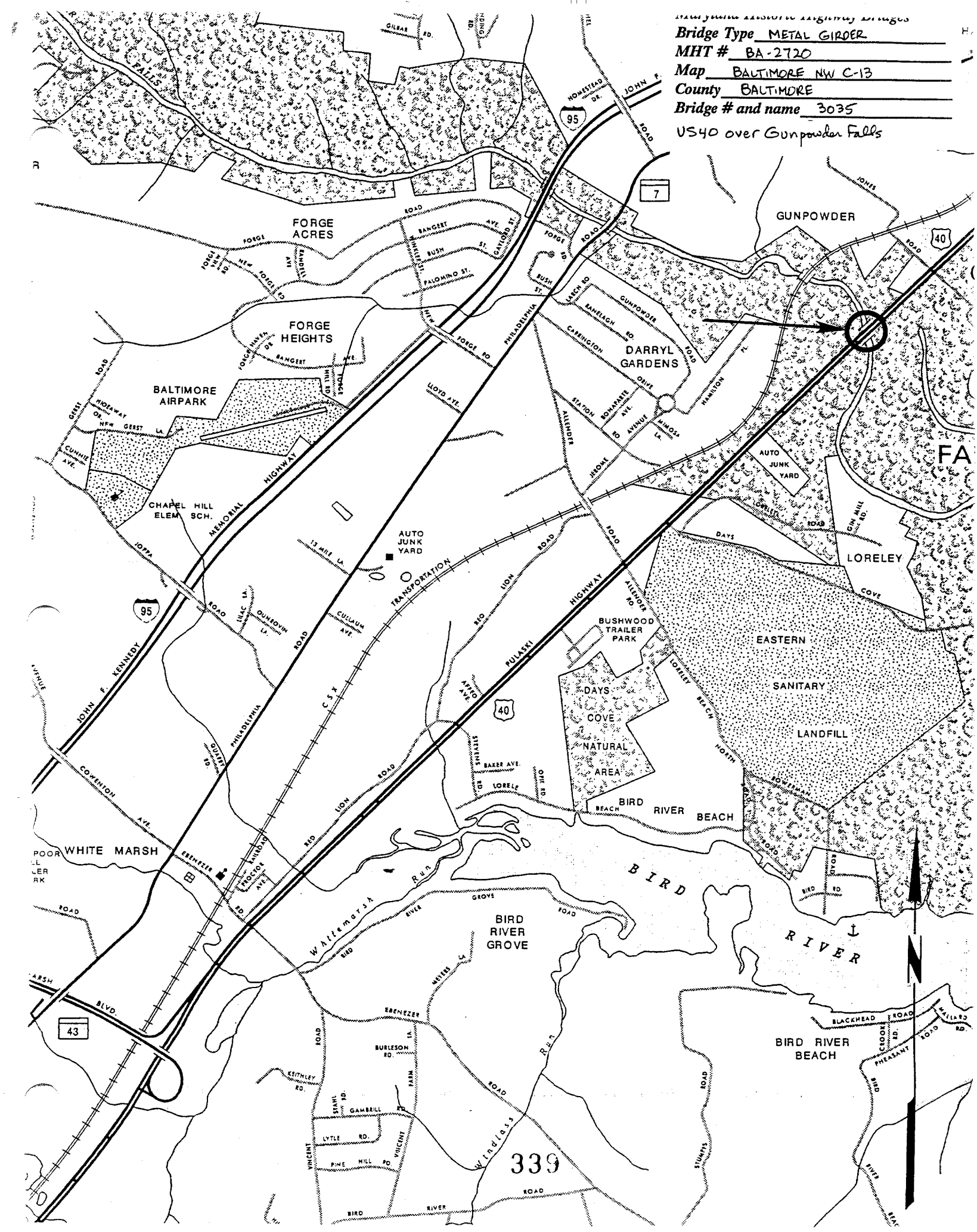
Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland.* Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

State Roads Commission
1958 *A History of Road Building in Maryland.* Published by author, Baltimore.

Tyrrell, Henry G.
1911 *History of Bridge Engineering.* Published by author, Chicago.

SURVEYOR:

Date bridge recorded 3/1/97
Name of surveyor Caroline Hall/Eric F. Griffitts
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1685 **FAX number** (410) 296-1670


Maryland Historic Highway Bridges
Bridge Type METAL GIRDER
MHT # BA-2720
Map BALTIMORE NW C-13
County BALTIMORE
Bridge # and name 3035
US40 over Gunpowder Falls
FORGE ACRES
FORGE HEIGHTS
BALTIMORE AIRPARK
CHAPEL HILL ELEM. SCH.
GUNPOWDER
DARRYL GARDENS
AUTO JUNK YARD
LORELEY
BUSHWOOD TRAILER PARK
EASTERN SANITARY LANDFILL
DAYS COVE NATURAL AREA
BIRD RIVER BEACH
BIRD RIVER GROVE
WHITE MARSH
BIRD RIVER
Whitemarsh Run
Windlass Run
339
95
40
7
43
JOHN F. KENNEDY HIGHWAY
PULASKI HIGHWAY
C S X
PHILADELPHIA ROAD
TRANSPORTATION ROAD
LION ROAD
FORGE ROAD
GUNPOWDER ROAD
EBENEZER ROAD
BIRD RIVER ROAD
COWENTON AVE.
LORELEY BEACH
BLACKHEAD ROAD


KEEP
OFF
MEDIAN

Inventory # BA-2720

Name 3035- US40 OVER GUNPOWDER FALLS
County/State BALTIMORE COUNTY/MD
Name of Photographer DAVE DIEHL
Date 1/95

Location of Negative SHA

Description WEST APPROACH LOOKING EAST

Number 14 of 374

Inventory # BA-2720

Name 3035- US 40 OVER GUNPOWDER FALLS

County/State BALTIMORE COUNTY / MD

Name of Photographer DAVE DIEHL

Date 7/95

Location of Negative SHA

Description SOUTH ELEVATION LOOKING NORTHWEST

Number 25 of ~~39~~ 34

Inventory # BA-2720

Name 3035 - US 40 OVER GUNPOWDER FALLS
County/State BALTIMORE COUNTY | MD
Name of Photographer DAVE DIEHL
Date 1|95

Location of Negative SHA

Description NORTH ELEVATION LOOKING SOUTHWEST

Number ~~10~~ 3 of ~~34~~ 4

Inventory # BA-2720

Name 3035-US40 OVER GUNPOWDER FALLS

County/State BALTIMORE COUNTY/MD

Name of Photographer DAVE DEHL

Date 1/95

Location of Negative SHA

Description EAST APPROACH LOOKING WEST

Number 4 of 4